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Application #	10/049,677
Confirmation #	7732
Filing Date	05/22/2002
First Inventor	Newman
Art Unit	3651
Examiner	J. Dillon, Jr.
Docket #	P07534US00/RFH
Total number of pages in this submission =	

**ENCLOSURES** (check all that apply)

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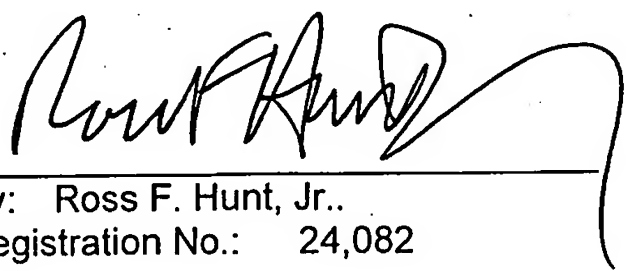
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Date: July 20, 2005

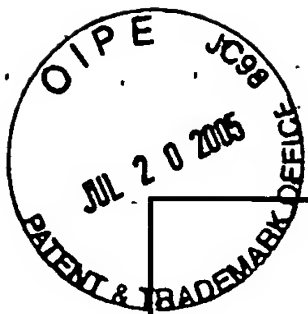
  
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**GROUP 3600**



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	Filing Date	05/22/2002
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**APPEAL FROM THE FINAL REJECTION MAILED FEBRUARY 1, 2005**

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**GROUP 3600**

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1. REAL PARTY IN INTEREST

This application is not assigned and thus the applicant-inventor is the real party in interest.

2. RELATED APPEALS AND INTERFERENCES

To the knowledge of the applicant, there are no related appeals or interferences.

3. STATUS OF CLAIMS

The only claims currently being examined, claims 1-7 and 16 have been finally rejected. Claims 12-15 and 17 have been withdrawn from further consideration.

4. STATUS OF AMENDMENTS

An Amendment filed after a final rejection dated July 13, 2004, was refused entry. The Amendment involved changing "for subjecting" to -- that subjects --, and was made simply to expedite the prosecution in response to a rejection under 35 USC 112 based on the contention that the "for subjecting" language is indefinite. A first Notice of Appeal was filed on December 10, 2004. Subsequently, after some discussion with the Examiner and his supervisor, the refusal to enter the amendment to the claims was confirmed but the rejection under 35 USC 112 was withdrawn.

There have been no amendments filed subsequent to the current final rejection of February 1, 2005.

5. SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention relates to apparatus and methods for conveying foodstuffs, and more particularly, relates to conveyors that are self-cleaning in that they present a freshly cleaned, decontaminated bed surface to the foodstuff to be conveyed.

As described at lines 13 to 20 of page 1 of the application, in the food industry, any contact between an item of food and the food conveyor is a potential source of microbial contamination of the food. Further, contaminants on the surface of the food can be transferred to equipment leading to cross contamination of subsequent items. The nature of continuous belt conveyors tends to increase the risk of cross

contamination, which is of particular concern in the food industry as it can lead to reduced shelf life of the contaminated food item, or even to food poisoning.

The claimed subject matter as set forth in claim 1, the only independent claim, relates to an improved conveying arrangement for conveying foodstuffs. Referring to the specific embodiment shown in Figure 1, the arrangement includes a conveying surface (12) of a conveyor (10) and is characterized by a decontamination arrangement comprising a first cleaner (120) which comprises a sprayer (130, 140) and is adapted to mechanically remove food debris from the conveying surface (12) (e.g., using the sprayer (130, 140)), although as set forth in some of the dependent claims, brush rollers and/or scrapers (150, 160) may be used in addition). The arrangement is further characterized by a second cleaner, located downstream of the first cleaner (120), for subjecting the conveying surface (12) to ultraviolet irradiation (using, for example, banks (200) of ultraviolet lamps).

As stated in the paragraph bridging pages 4 and 5 of the specification, a synergy is produced by the combined effect of mechanical cleaning and UV irradiation. Washing alone will not sterilize the belt although it can make it very clean. UV alone will not sterilize the belt, for the reason that the UV has minimal penetration capability, irrespective of energy level, and thus what results with the use of UV alone is a sterile belt where there is no debris, and a sterile surface on the debris where there is debris. However, the moment that the surface of the debris is disturbed, e.g., by product falling on or across it, the sterile surface of the debris is disrupted thereby exposing unsterile debris below. Thus, both effective mechanical cleaning and UV treatment are needed to create a sterile, clean belt.

Regarding the dependent claims, claim 3 recites that in addition to the sprayer (130, 140), the first cleaner (120) includes one or more of brushes and scrapers (e.g., (150, 160) of Figure 1 or (150a, 160a) and (150b, 160b) of Figure 4).

Claim 4 depends on claim 3 and recites that the sprayer (130, 140) of the first cleaner (120) comprises a rinse/clean unit (120) having liquid directing means (130, 140) for directing liquid onto the conveying surface (see page 10, line 30 to page 11, line 15).

Dependent claim 5 provides that the second cleaner (formed by bank 200 of UV lamp arrays 202 and 205) applies UV radiation “right across the conveying surface at a power of at least 2 W/m<sup>2</sup>” (page 4, lines 25-28).

Claim 6 provides either or both of the first cleaner (120) and second cleaner (UV bank 200 act on the conveying surface at a “flexure” thereof. This is shown in Figure 2 for the first cleaner (liquid dispensing means 135) wherein the “liquid is directed at flexure 35” (see page 11, lines 23 to 26). Figure 3 shows the second cleaner (UV lamps 210) similarly positioned at a flexure.

Dependent claim 7 relates to the provision of a detection unit (sensor units 165, 166 of Figure 1) positioned adjacent to the conveying surface, downstream of at least the first cleaner (120), to detect the presence of any residual matter on the conveying surface after the action of said [at least the first] cleaner.

Claim 16 provides that the decontamination chamber includes a liquid containment chamber (124) with entry and exit openings for the conveying means.

## 6. GROUNDS OF REJECTIONS TO BE REVIEWED ON APPEAL

The single rejection to be reviewed is the rejection of claims 1-7 and 16 under 35 USC 103(a) as being “unpatentable over Claude et al (FR 2 744 920) in view of Krooss.”

## 7. ARGUMENT

### A. The Rejection of the Claims

As indicated above, claim 1 has been rejected, along with claims 2-7 and 16, under 35 USC 103(a) based on a combination of “Claude et al (FR 2 744 920)” (Claude) in view of Krooss, “substantially as applied in paper 7.” Paper 7 includes two rejections, including one under 35 USC 102(b). This rejection is important in that it sets forth what the Examiner contends that Claude discloses, as follows:

Claude et al. (FR 2 744 820) disclose:

- a conveyor, Figure(s) 1-3;
- a sprayer 4;
- a brush or scraper at the flexure 5;
- UV irradiation 3, Figure(s) 1.

In the second rejection, made under 35 USC 103(a) based on the combination of Claude and Krooss, the Examiner states:

With regard to claim(s) 7, 14-15 Claude et al. (FR 2 744 820) may lack automatic control.

It has generally been recognized that the use of a conventional control to automate a previously manual operation involves only routine skill in the art. *In re Venner*, 120 USPQ 193 (CCPA 1958).

With regard to claim(s) 5, as the applicant has failed to show criticality or unexpected results, power application is considered to be a matter of design choice.

It would have been obvious to modify Claude et al. (FR 2 744 820) to provide automatic control in order to increase effectiveness.

In subsequent Office Actions, the Examiner has contended that:

Claude et al. (FR 2 744 920) does disclose the need for dry conveyance operations. This doesn't preclude a wet cleaning step during a cleaning operation. This is further facilitated by the fact that Claude et al. (FR 2 744 920) already employs a drying step in the cleaning operation. One would merely have to let the cleaning operation proceed longer.

#### B. Applicant's Argument

##### Claims 1 and 2

It is respectfully submitted that the teachings of the Claude patent have been misinterpreted in the discussion by the Examiner of this reference. As indicated above, in "paper 7" it was contended that element 4 is a sprayer. However, element 4, in fact, represents a plurality of UV germicidal lamps, as is set forth in the Derwent Abstract which was supplied during the prosecution and which is enclosed. Thus, it is respectfully submitted that the Claude patent does not disclose the use of a sprayer, and given that the Krooss patent was apparently cited only to provide a disclosure of "automatic control," it is clear that the references, even if combined, would not meet the terms of the claims. Moreover, given that, as discussed in more detail below, the Claude reference relates to drier/disinfection for a self-contained dough-rolling machine

wherein humidity is eliminated while the Krooss patent relates to a cleaning mechanism for spillage from bottles carried by a conveyor by wherein water is sprayed onto a rug belt that contacts the conveyor, it is respectfully submitted that the teachings of the Claude patent are so different from the Krooss patent that the two references cannot be meaningfully combined, and would not be combined without the improper use of hindsight.

Considering the latter points in more detail, as was also indicated above, in the most current Office Action, the Examiner acknowledges that the Claude reference “does disclose the need for dry conveyance operation” (emphasis added) but adds that “[t]his doesn’t preclude a wet cleaning step during a cleaning operation.” It is respectfully submitted that these contentions are not well taken. First, it is respectfully suggested that it is misleading to state that the Claude reference discloses “conveyance operations.” In this regard, the Claude reference is not concerned with a conveying arrangement but is rather concerned with an apparatus for forming dough or pastry by rolling the dough between belts. Moreover, the reference shows a pair of forming belts mounted entirely within a cabinet.

Further, as stated in the sixth paragraph of the description in Claude (in the attached translation) “the invention has for an aim to remedy the problems [humidity left on the forming belt, and the germs and microbes carried by dust in the air] by eliminating the humidity which is a carrier of the germs and the microbes and in destroying the germs and the microbes which can be present on the forming belt.” Thus, it is respectfully submitted that it is clear that moisture is the enemy in the apparatus of the Claude reference. The amount of moisture generated by rolling lumps of dough is likely to be small, in absolute terms. However, in the context of the reference, even this level of moisture must be eliminated. Accordingly, everything within the cabinet is dried as much as possible, by means of radiation and blowing air. Given the context of the teachings of the reference, it is respectfully submitted that it simply would not be conceivable to one of ordinary skill in the art to incorporate a wet cleaning step involving the deliberate spraying of water on the dough forming belts. Obviously, if the apparatus of the reference were altered to include a sprayer, the atmosphere within the cabinet would inevitably become quite moist, and the object of



“eliminating the humidity which is a carrier of the germs and microbes” would not be achieved. Thus, it is respectfully submitted that the addition of a wet cleaning device wherein water would be sprayed on the forming belts is completely contrary to the specific teachings of the reference.

Turning to the Krooss reference, this reference is essentially concerned with a belt formed of rug material for cleaning the bottoms of bottles being carried thereby and for removing from a conveyor carrying the bottles small amounts of spillage from the bottles. The rug belt is sprayed with water. The belt subsequently passes a squeegee in order to control the amount of liquid in the belt. This squeegee also provides some cleaning of the belt. Clearly, the cleaning provided by the Krooss system is a very coarse cleaning. Apart from cleaning the bottoms of bottles, the purpose thereof is simply to prevent material adhering to the conveyor from causing the conveyor to jam and malfunction because of excess amounts of dirt (see column 1, lines 18-22). There is clearly no teaching of any form of sterilization in the Krooss reference.

As indicated above, the Examiner appears to rely on the Krooss patent for its teaching of “automatic operation” but to the extent that the Examiner is now arguing that it would be obvious to incorporate the water sprayer feature of Krooss in Claude, it is respectfully submitted that this combination is completely untenable. In this regard, it is respectfully submitted that the system disclosed in the Krooss patent is clearly very different from that of the present invention as well as from the device of the Claude reference. The essential features of the Krooss patent, viz., the provision of a belt of rug or carpet material, sprayed with liquid, are totally unsuitable for the food handling operations of either the present invention or the Claude reference. Further, as discussed above, a wet (water sprayed) belt would be completely unsuitable for use in the Claude system which is specifically concerned with eliminating humidity. Thus, it is respectfully submitted that there is certainly no reason why the teachings of the two references would be combined, given what the references actually disclose, without the improper benefit of hindsight. Moreover, given the actual disclosures of the two references, no fair combination of these references could result in the present invention as claimed.

### Claim 3

Claim 3 further recites that, in addition to the sprayer, the arrangement includes one or more of brushes and scrapers. Although Claude does disclose a brush 5, it is respectfully submitted that this claim further underscores the overall differences between the present invention and Claude, i.e., because Claude already uses UV and a brush and this apparently provides the required cleaning in a dough rolling machine, the further addition of a sprayer would not be obvious for this reason as well as the more compelling reasons discussed above regarding the need to maintain a humidity free environment.

### Claim 4

Claim 4 depends from claim 3 and, of course, similar remarks apply. Moreover, claim 4 recites a rinse/clean unit including a liquid directing means for directing liquid onto the conveyor surface and a brush or scraper for acting on the surface wetted by the liquid from the liquid directing means. This sequence of directing liquid onto the conveyor surface and then brushing the wet surface is completely absent from both references and, in this regard, although, again, the Examiner appears to be relying on the Krooss patent solely for its teaching of "automatic" operation, to the extent that the Examiner is prepared to read the rug belt of Krooss as a "brush," in Krooss, it is the brush that is sprayed and thus wetted not the surface of the conveyor. In other words, Krooss does not even teach directing liquid onto a conveyor surface much less the sequence claimed.

### Claim 5

Claim 5 recites a specific UV power level of at least  $2\text{W/m}^2$  and while the Examiner contends that this power level is a "matter of design choice," it is not seen that determining a minimum effective UV power level for use in the particular foodstuff conveying arrangement claimed is, in fact, merely a design choice.

Claim 6

As was discussed above, claim 6 recites that one or both of the cleaners act at the flexure of the conveying surface. Contrary to the contention of the Examiner brush 5 of Claude does not act the flexure of the conveying surface.

Claim 7

As was also indicated above, claim 7 recites a detection unit for detecting residual debris. This feature is completely absent from both references, is not obvious from these references and does not appear to have been addressed by the Examiner.

Claim 16

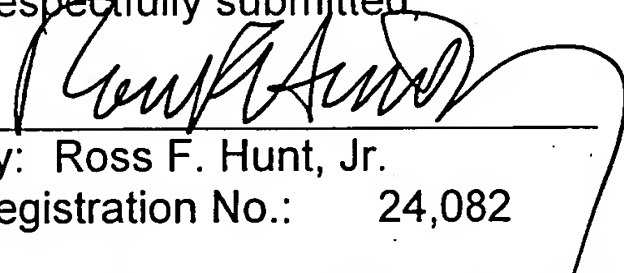
Claim 16 recites a liquid containment chamber including entry and exit openings fro the conveying means. The Claude reference discloses a completely self-contained housing for the dough forming belts and, again, the housing is to be as free as possible of humidity.

CONCLUSION

For the reasons set forth above, the rejection of claims 107 and 16 should be reversed.

Respectfully submitted,

Date: July 20, 2005

  
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## 8. CLAIMS APPENDIX

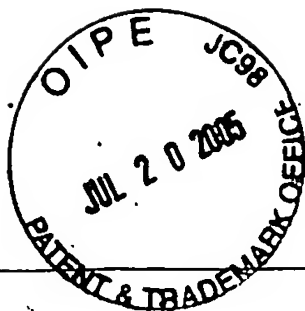
1. A conveying arrangement for conveying foodstuffs including a conveying surface for conveying a foodstuff, characterized by a decontamination arrangement comprising a first cleaner which comprises a sprayer and is adapted to mechanically remove food debris from the conveying surface, and a second cleaner, downstream of the first cleaner, that subjects said surface to ultraviolet irradiation.
2. A conveying arrangement according to claim 1 in which the conveying means is a belt.
3. A conveying arrangement according to claim 1 in which the first cleaner includes one or more of brushes and scrapers.
4. A conveying arrangement according to claim 3 in which the sprayer of the first cleaner comprises a rinse/clean unit having liquid directing means for directing liquid onto the conveying surface and in which the first cleaner further comprises a brush or scraper for acting on the conveying surface wetted by the liquid directed thereon by said liquid directing means.
5. A conveying arrangement according to claim 1 in which the second cleaner applies UV radiation right across the conveying surface at a power of at least 2 W/m<sup>2</sup>.
6. A conveying arrangement according to claim 1 in which said first cleaner and/or said second cleaner acts on the conveying surface at a flexure thereof.
7. A conveying arrangement according to claim 1 comprising a detection unit positioned adjacent the conveying surface downstream of at least the first cleaner, to detect the presence of any residual matter on the conveying surface after the action of said cleaner.

16. A conveying arrangement according to claim 1 wherein said decontamination arrangement includes a liquid containment chamber with entry and exit openings for the conveying means.

9. EVIDENCE APPENDIX

A. Derwent Abstract referenced (and a copy submitted) in the Amendment filed on July 1, 2003, page 3, first full paragraph.

B. Translation of the primary reference ("FR 2 744 920") (and a copy submitted) in the Amendment filed on July 1, 2003, page 3, first full paragraph.



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Drier and disinfecter for belts of dough-rolling machine - comprises housing containing UV lamps and hot air blower, mounted on top of machine

Patent Number : FR2744920

International patents classification : A61L-002/10 A21C-011/00

Abstract :

FR 744920 A A drier/disinfecter consists of a housing (1) mounted on top of the dough-rolling machine (2). The housing contains UV germicidal lamps (4) to disinfect the dough-rolling belts and a hot air blower (3) to dry them. A variant of the design can also contain brushes to remove any material adhering to the belts. The housing (1) can be made detachable from the machine for ease of maintenance.

ADVANTAGE - The device offers improved hygiene in food preparation. (Dwg.1/3)

• Publication data :

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DW1997-41 A61L-002/10 1p \* AP: 1996FR-  
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Inventor(s) : MARIE JC; MARIE JM;  
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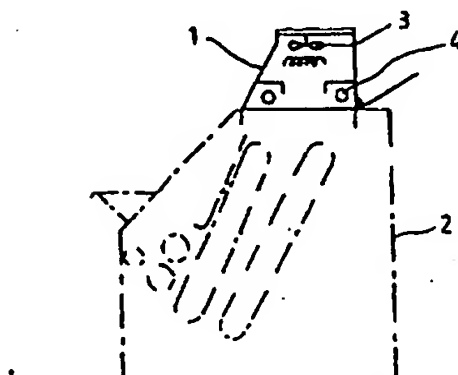
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A05  
Derwent Classes : D11 P34

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41



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Image  
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Thomson Derwent

FR2,744,920

**Marie: Translation of Description**

The present invention has for its object a universal steriliser-dryer for forming belts.

There are a number of forming devices used in industry for transforming agro-food products.

The forming apparatus permits the production, for example, of pastries or breads mechanically, using as the raw material bread dough, puff pastry, flaky pastry, or any other type of pastry used in foods. The forming apparatus effects the forming of the raw material giving, for example, to the pastry (or dough) the form of the future loaves or of the future brioches.

In this type of industry, involving the transformation of food products, hygiene is an absolute imperative to permit good treatment and also good conservation of the prepared products designed for mass consumption. The working surfaces, notably the forming belts, must be perfectly clean, that is to say with neither microbes nor germs.

The humidity left on the forming belt by the pastry to be formed, which is a carrier of germs and microbes and which is applied to the belt repeatedly, and the germs and microbes carried by the dust in the air, must be countered in the needs of total hygiene.

The invention has for an aim to remedy these problems, by eliminating the humidity which is a carrier of the germs and the microbes, and in destroying the germs and the microbes which can be present on the forming belt.

According to the invention, this result is attained with a germicidal device, particularly but not solely for a forming belt, characterised in that it consists essentially of a steriliser and a dryer.

Preferably, the steriliser is characterised in that it is constituted essentially by germicidal UV lamps.

The dryer has the form of a means of ventilation using hot air. In order to be adaptable to all sorts of forming devices, the germicidal device for a forming belt is characterised in that it consists essentially of a steriliser and a dryer, and can be presented in the form of a removable casing.

If the sterilising device is integral and not removable, it also includes a brush. The said brush permits a mechanical cleaning of the forming belt, which combines with the germicidal action of the UV lamp and the drying action of the dryer.

The invention will be understood better with the aid of the description below of a preferred embodiment of the invention, given by way of non-limiting example, with reference to the accompanying drawings, in which:



Figure 1 is a diagram of a forming device and of a universal steriliser-dryer for a forming device according to the invention, in the form of a removable casing.

Figure 2 is a diagram of a forming device without a universal steriliser-dryer device for a forming device according to the invention in the form of a removable casing.

Figure 3 is a diagram of a universal steriliser-dryer device.

The steriliser-dryer has the form of a casing (1) mounted or installed within the forming device (2).

The universal steriliser-dryer for the forming belt is essentially composed of a ventilator using hot air (3), of a UV lamp (4), and of a brush (5), if the steriliser-dryer is integral with the forming apparatus.

The sterilising device, presented in the form of a removable casing, permits a simpler maintenance of the germicidal device.

The person in charge of the maintenance of the forming device can repair or check the sterilising device which is in the form of a removable casing, at a distance from the forming device. In the best working conditions, this person can thus more easily access the different elements of the sterilising device, the sterilising UV lamps (4) or the dryer under the form of a hot air ventilator (3).

10. RELATED PROCEEDINGS APPENDIX

None